

# AN OVERVIEW OF POSTWAR TAX POLICIES IN JAPAN†

By HIROMITSU ISHI\*

## I. *Introduction*

In recent years, there has been a growing interest in the potential of taxation as a tool for influencing private economic activity. In a word, this is a view based on tax incentives to serve social and economic aims. On the other hand, it is noted that there are demerits to such usage of a tax system. This is especially true when we evaluate the past performance of tax policies from a standpoint of the establishment of tax equity.

The purpose of this paper is to give an overview of postwar tax policies employed by the Japanese government. Although there are various facets to the problem, greater attention is placed on two aspects of the tax system, focusing on the individual income tax (hereafter simply referred to as the income tax), as mentioned above; (1) tax incentives and (2) tax equity.

This paper consists of three parts. A preliminary discussion on the outline of postwar tax policies constitutes the first part found in section II. This is followed by the second part on effects of annual tax reductions found in section III, and the third on examination of tax incentives on saving found in section IV. Finally, concluding remarks are presented with regard to policy proposals.

## II. *An Outline of Postwar Tax Policies*

It is not easy to casually analyze the government behaviors on tax policies. Throughout the postwar period, it should be noted that there have been some forms of rules about tax policies, which have been gradually created in correspondence with the actual performance of the economy. We may be able to call them "empirical rules." Although some differences in interpretation may exist, we may be able to summarize the operation of the government tax policy under the following two empirical rules;

- (1) a successive tax-cut policy to maintain a lower level of tax burden,
- (2) a positive tax policy to encourage the achievement of specific policy goals.

In addition to these two rules, a rule of sound public finance might be added to clarify the whole image of the government fiscal activity in the postwar period.<sup>1</sup>

In retrospect, annual tax reductions characterize the postwar history of income taxes. Until recent years (i.e., 1977), excluding the years 1960 and 1976, income taxes have been

---

\* Professor (*Kyôju*) of Public Finance.

† The author is indebted to Messrs. K. Yoshida and M. Okuda in Fiscal and Monetary Research Office, Ministry of Finance for helpful suggestion and calculations. Also, he is grateful to Miss Jane Galla for her editorial assistance.

<sup>1</sup> See H. Ishi (1973), pp. 59-60.

reduced every year. The main purpose of tax-cut policies was to mitigate the increasing tax burden derived from the combination of rapid economic growth with a high income elasticity of the income tax yield. Detailed measures fall into three types; (1) increasing exemption and deduction, (2) lowering progressive tax rates, and (3) creating or enlarging special tax measures.

In the context of annual tax reductions, it is noted that the government adopted a tax policy to keep the ratio of tax yields (including both national and local taxes) to the national income constant (e.g., 20%). This tax policy rule has been employed especially during the period 1955–1965. In a growing economy like that of postwar Japan, this automatically led to large reductions in annual tax revenues. If tax reductions had not been implemented, the income taxes would have unduly overburdened the taxpayers. In recent years, annual tax-cut policies had to be terminated mainly on account of revenue shortages reflecting the lower growth rate in the Japanese economy since the oil crisis. The first rule of tax-cut, however, should be regarded as an influential policy target that the government has traditionally maintained for a long-run period.

In regards to the second rule, special tax measures were initiated to implement specific policy targets, in particular capital accumulation (i.e., incentives on saving and equity investment).<sup>2</sup> The fundamental framework of the income tax system was derived from the 1949 Shoup recommendation.<sup>3</sup> Among several important tax proposals, the most outstanding feature of the Shoup recommendation was that a progressive and broad-based income tax should be the mainstay of the Japanese tax system. In particular, an overall aggregation of taxable income was to be strictly applied in levying the income tax. That is, all forms of income were included in the tax base with no exceptions. For example, occasional<sup>4</sup> income or capital gains from the sale of securities were fully subject to income taxation.

It is widely acknowledged that the Shoup recommendation was somewhat too idealistic to fit in with the actual performance of the Japanese economy and the realities of Japanese society. Thus, soon after the essential parts of the Shoup recommendation had been enacted in 1950, the Japanese government began to modify and relax some provisions of the law. Since then, tax reforms enacted over the postwar period in Japan have included special measures which have provided for:

- (1) the full or partial exclusion of certain items of income from the tax base;
- (2) the separate application of special reduced tax rates to certain items of income.

These categories fall more or less under the Special Tax Measures Law which was designed to give preferential treatment to specific sources of income and was motivated by economic policy goals.

Although some of these special provisions have been phased out, a number of them remain as part of the present income tax law. Examples of the first category are the partial nontaxable treatment of interest and dividend income and the full exclusion of capital gains

<sup>2</sup> For a more expanded discussion, see J. A. Pechman and K. Kaizuka (1976).

<sup>3</sup> The Shoup recommendation was proposed by a group of tax specialists, headed by Professor Carl Shoup of Columbia University. The purpose of the Shoup mission was to recommend a tax system that would contribute to economic stability and would require no changes for several years to come. The mission's detailed report (65,000 words), which covers the Japanese tax system, both central and local, has been made public. See, for a more detailed discussion, K. Yamamura (1967), pp. 29–33.

<sup>4</sup> Occasional income includes, for instance, winnings gained from horse races and prizes from any contest, such as lotteries or television and radio quiz programs.

from the sale of securities. Under the separate taxation provision—as the second type of special measure will be called—income from interest, dividends, capital gains, retirement, and sale of timber is taxed separately and at lower tax rate from other income. The separate taxation provision is a clear deviation from the recommendation of the Shoup Mission that all income, regardless of its source, should be aggregated for the purpose of taxation.

How have the above mentioned tax policies affected the economy? Particular attention should be paid to lower tax burdens and high personal saving rate unique to Japan. It is well-known that tax burdens in Japan are lower than those in any other advanced countries. In terms of the percentage of total tax yields relative to the national income in 1980, Japan shows merely 22.8% while the U.S. 28.0%, the U.K. 40.8%, W. Germany 31.6% and France

TABLE 1. NONTAXABLE INTEREST INCOME UNDER THE SPECIAL  
TAX MEASURES LAW

Sources	Limit of Total Principal or Total Face Value
(1) postal savings	¥ 3 million
(2) small savings tax exemption	3
(3) national and local bonds	3
(4) savings for the formation of employee's assets	5
total	14

*Notes:* The amount of item (1) cannot exceed ¥3 million. By contrast, savings under item (2) can exceed that limit, the interests of which are subject to taxation. Small savings tax exemption system includes nontaxable interest income or distribution of profits from bank deposits, joint operation trusts, bond and debentures, open-end bond investment, etc. The provision for savings for the formation of employees' assets was designed in 1972, following the West Germany experience, to stimulate employees to create financial assets. Under this special scheme, interest and other proceeds from specific deposits, life insurance, or bonds or debentures are exempt from taxation so long as the total principal does not exceed ¥5 million. Wage earners alone are eligible to use this system.

TABLE 2. SPECIAL TAX MEASURE FOR INTEREST INCOME—REDUCED TAX  
RATES IN THE CASE OF SEPARATE TAXATION AT SOURCE

Reduced Tax Rates	Period
50%	1951-52
10	1953
5 (long-term saving)	1954
10 (short-term saving)	
nontaxable	1955-56
10 (short-term saving)	1957-62
5 (long-term saving)	1959-62
5	1963-64
10	1965-70
20 (short- and long-term savings)	1971-72
25	1973-75
30	1976-77
35	1978-83

32.1%. Such lower tax burdens as Japan's has been regarded as the stimulant of the activities in the private economy.

Likewise, tax incentives in terms of special tax measures may contribute to induce the higher saving rate in the household sector. Detailed discussion will be developed in the next section to ascertain the relation between saving and taxation.

Before proceeding further, it would be better to explain institutionally the nature of personal income taxes as tax incentives on savings. Tables 1 and 2 are prepared for this purpose. Traditionally, there were two types of stimulative devices to increase savings; (1) nontaxable treatment on certain items of interest income, and (2) the application of reduced tax rates at source under the separate taxation. As Table 1 indicates, interest income accruing from four kinds of savings and bond investment is exempt from tax, although total principal or total face value has some limit. Similarly, interest on time deposit and other deposits of a similar nature can be taxed separately from other income at the taxpayer's option. The tax rate in this case is a flat and reduced one, independent of progressive tax rates, under the Special Tax Measures Law. Over the past years, the tax rate has been altered in each period, as Table 2 summarizes. Special attention should be paid to the 1955-56 period when interest income was fully tax-exempt.

Under the 1980 tax reform, however, it was decided that this separate taxation for interest income should be abolished in 1984 from a standpoint of tax equity. This means that interest and other income should be taxed together on an aggregate basis. In order to ensure such a new system, a decision was made to introduce "the Green Card System," which is more or less similar to the social security number used in the U.S. for the purpose of taxation.<sup>5</sup>

### III. *Effects of Tax-Reduction Policy*

Let us begin with the analysis on the effects of income tax-reductions. Particular attention is paid to two aspects; (1) effects of inflation adjustment for reducing the income tax liabilities, and (2) effects of the income tax on the distribution of income.

It is acknowledged that the major target of income tax reductions was to adjust for heavier tax burdens due to inflation. Inflation causes significant increases in the effective rates of the income tax on real income if there are no adjustments for inflation. In general, a fixed money amount, such as the rate boundaries, deductions and exemptions, does not increase automatically with inflation. As a taxpayer's money income rises as a result of wage hikes in a inflationary economy, he is often thrown into higher tax rate brackets and the fixed money deductions and exemptions reduce a smaller fraction of income otherwise subject to taxation. Consequently tax liabilities increase faster than inflation and take away an increasing larger percentage of the taxpayer's real income.

The government attempted to reduce these tax liabilities caused by inflation during almost every year of the postwar period until 1977. In Japan, it did not provide for automatic adjustments to offset the impact of inflation on the income tax liabilities, and it reduced taxes periodically on an ad hoc basis, rather than under an indexed system. It is important to

---

<sup>5</sup> For a more detailed information, see Ministry of Finance (1981), pp. 46-47. The introduction of "the Green Card System" is now a subject of controversy especially among politicians with special respect to the tax evasion in an underground economy. The system may be postponed or be repealed.

identify how effective discretionary tax reductions were to adjust for the inflationary effect on tax liabilities.

In order to investigate the effect of inflationary adjustments, actual reductions in tax liabilities are compared with the tax liabilities that would have applied under an indexed system for two sub-periods (i.e., (1) 1960–70, and (2) 1975–80).

Necessary information is obtained from two kinds of tax statistics collected by National Tax Administration Agency (NTAA).<sup>6</sup> Each of the data sources classifies income taxes into two types of self-assessed and withheld income taxes. The former is levied on the self-employed and entrepreneurial income, agricultural income, property income, etc., in the form of declaration system. The latter is only applied to wage and salary. In the discussion that follows, analytical results using each of the two different data sources are shown.

Table 3 gives estimates of the self-assessed income tax liabilities and the effective rates that would have applied if the income tax had been indexed for inflation for the years 1960–70 under the 1960 tax law. The case of assuming automatic inflation adjustments is compared with the actual case which has in practice included periodic tax cuts. Of utmost importance is the derivation of tax liabilities after inflation adjustments (see column (5)), which means deflated taxes in year  $n$  under the 1960 tax law.

According to the Sunley=Pechman formula,<sup>7</sup> deflated taxes in year  $n$  are estimated;

TABLE 3. SELF-ASSESSED INCOME TAX LIABILITIES AND INFLATION  
UNDER THE 1960 TAX LAW

UNDER THE 1969 TAX LAW

(¥ billion, %)									
Year	Income		Deflator	Tax Liabilities			Effective Tax Rates		
	Current Price (1)	1960 Price (2)		1960 =100 (3)	Actual	After Inflation Adjustments		Actual (7)	After Inflation Adjustments (8)
			Current Price (4)		1960 Price (5)	Current Price (6)			
1960	1,282	1,282	100.0	95	95	95	7.41	7.41	0
1961	1,484	1,375	107.9	123	105	113	8.29	7.64	-0.65
1962	1,835	1,641	111.8	144	134	150	7.85	8.17	0.32
1963	2,252	1,930	116.7	189	166	194	8.39	8.60	0.21
1964	2,644	2,167	122.0	216	192	234	8.17	8.86	0.69
1965	2,818	2,198	128.2	230	196	251	8.16	8.92	0.76
1966	3,257	2,423	134.4	265	220	296	8.14	9.08	0.94
1967	3,943	2,800	140.8	336	261	368	8.52	9.32	0.80
1968	4,718	3,210	147.0	420	306	450	8.90	9.53	0.63
1969	6,386	4,158	153.6	540	410	630	8.46	9.86	1.40
1970	8,044	4,902	164.1	664	492	807	8.25	10.04	1.79

Note: 1. Income is taxable income before deductions and exemptions.

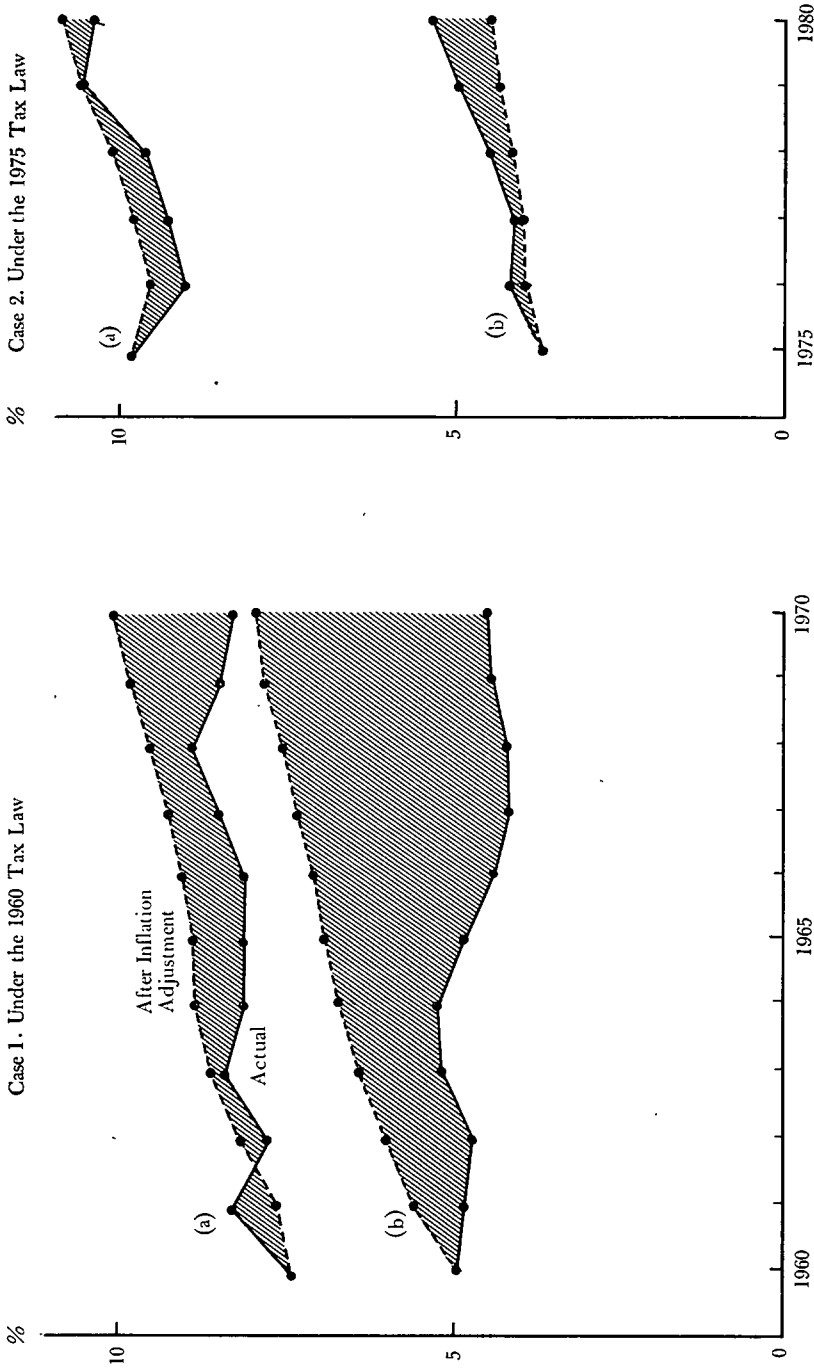
2. (7)=(4)÷(1)×100, (8)=(6)÷(1)×100 or (5)÷(2)×100, (6)=(5)×(3)+100

3. These notes are the same as the following Appendix Tables.

<sup>6</sup> Two basic sources for income tax data are obtained from the NTAA data; one is *Statistics on the Self-Assessed Income Tax* (Shinkoku Shotokuzei no Jittai) which contains data relevant to self-employed taxpayers and asset holders, and the other *Statistics on Private Wages and Salaries* (Minkan Kyuyo no Jittai) which obtains data for individuals falling under the withholding system.

<sup>7</sup> E. M. Sunley, Jr. and J. M. Pechman (1976) p. 165. For a more detailed discussion of indexing methods from a practical point of view, see Vito Tanzi (1976), (1980).

FIG. 1 INCOME TAX LIABILITIES: ACTUAL AND AFTER INFLATION ADJUSTMENTS



$$T_n^d = T^* \left\{ 1 + \beta \left( \frac{Y_n^d}{Y^*} - 1 \right) \right\} = T^* + \beta T^* \left( \frac{Y_n^d}{Y^*} - 1 \right)$$

where  $T^*$ ,  $Y^*$  = taxes and income in 1960,  $T_n^d$ ,  $Y_n^d$  = deflated taxes and income in year  $n$  ( $n=0.1, 2 \dots$ ), and  $\beta$  = the elasticity of tax revenues with respect to income in 1960.<sup>8</sup>

Comparison between the two cases of tax liabilities is made in terms of effective tax rates in columns (8) and (9). The final results, including three other cases (see Appendix Tables), are illustrated in Fig. 1. Major fact findings are as follows;

- (1) In all cases the effective tax rates after inflation adjustments show upward trends. This reflects the fact that tax revenues tend to grow in real terms even if the tax system is completely indexed for inflation, because of the interaction between a progressive rate structure and growing real incomes.
- (2) The deviation of the effective rates after inflation adjustments from the actual effective rates (the shaded areas) implies that the reductions in taxes have more than offset the increases in revenues caused by inflation. This is true, except in case 2-(b).
- (3) By contrast, in case 2-(b) the reverse phenomenon is incurred in the withheld income tax on wage and salary from 1975 to 1980. Obviously, this is due to the lack of periodic tax cuts and adjustments for inflation since 1977. Tax revenues automatically rise under a fixed tax system with a growing money income.
- (4) The reason why the self-assessed income tax remains the same in case 2 as in case 1 is not clear, but tax avoidance and evasion would probably explain to a considerable extent the lower tax liabilities in the actual effective rates than those after inflation adjustments.<sup>9</sup>

In sum, in the aggregate the actual tax adjustments due to the changes in the tax law prior to 1977 exceeded the inflation adjustments that would have been made under indexing.

Next, turning to another feature of tax cut policies, let us examine the redistributive effects of income taxation.<sup>10</sup> It is widely acknowledged that taxation would reduce economic inequality or check the increase of income inequality. In particular, a progressive structure of the tax system is expected to play an influential role on the size distribution of income.

In view of distributional effects by taxation, greater emphasis should be placed on the income tax because it is one of the typical taxes that is equipped with steeply progressive tax rates. Since there is more tax burden on higher income classes and less on lower income earners, it is commonly considered that the income tax has substantially narrowed income inequality.

In order to ascertain this effect, it is necessary to correlate some of the relevant information about redistributional effects of income taxation to the distribution of income and to interpret them as one of the policy behaviors in Japan. Given the current state of available data, it is not necessarily easy to determine the influence of taxation on income concentration. Frequently, skeptics raise questions about the quality of statistics that are obtainable and the results derived from them.

<sup>8</sup>  $\beta=1.477$ , which is calculated by using cross-sectional data in 1960. In other cases, it is also calculated in a similar manner. In the case of the withheld income tax,  $\beta=1.819$  under the 1960 tax law, while  $\beta=1.503$  and 2.040, respectively, in the cases of the self-assessed and the withheld income taxes in the 1975 tax law.

<sup>9</sup> It is widely believed that, while wage and salary income are fully captured as taxable income under the present tax law, only 50 percent of business income and 30 percent of agricultural income are declared as part of total income.

<sup>10</sup> See H. Ishi (1980).

Ideally, the influence of income tax on income equality should be measured by reference to reliable statistics based on a comprehensive definition of income, including accrued or realized income.<sup>11</sup> However, the data available in Japan has considerably departed from this ideal level. Therefore, the necessary data are derived from the same tax statistics as we have already used.

Reference is made to examine the indicators of measurement in income inequality. Several indicators are alternatively available, and more reliable methods to measure the income distribution have virtually developed in recent years. Chiefly because of the simplicity in its calculation, the familiar approach of the Lorenz curve and Gini coefficient are used here. As is well known, the percent of income cumulated from lowest to highest is plotted on the vertical axis, and the percent of household or person cumulated from lowest to highest is plotted on the horizontal axis. Obviously, the more uneven the income distribution, the more the curvature in the Lorenz curve. Thus, the ratio of the area between the Lorenz curve and the line of equal distribution to the entire area below the line of equal distribution becomes pertinent in elucidating the questions of income equality or inequality. This ratio is the Gini coefficient.

By using the before-tax and after-tax data, we can draw two curvature lines on the map of Lorenz curve and compute two Gini coefficients; one is for before-tax  $Rb$  and the other for after-tax  $Ra$ . Effects of taxation on income distribution can now be defined as follows.

$$\phi = \frac{Rb - Ra}{Rb}$$

In the above equation, the  $\phi$  is called here to the equalization coefficient; therefore the larger  $\phi$  is the more powerful the redistributational effect is.

In Fig. 2 the long-term movements of equalizing coefficient  $\phi$  are shown for two types of income taxes for the years between 1951 to 80. Of significance is the fact that over the past two decades or so until mid-1970 the income taxes have substantially continued to diminish its redistributational effects as a whole. Measured in terms of the  $\phi$ , the income tax on the self-employed and others remained around 11 percent for 1951–53, but thereafter it continued to fall sharply to the lowest point, 3.17 percent in 1971. The same phenomenon can hold for the withheld income tax on wage and salary. The value of equalization coefficient in 1951–52 exceeded 9 percent while it declined to nearly 3 percent in 1974–75. Subsequently, the level of equalizing power was slightly restored.

Since mid-1970, however, two values of the  $\phi$  turn into upward trends for the recent years. The increases of equalizing power would probably be induced through no periodic tax cuts for inflation adjustments.

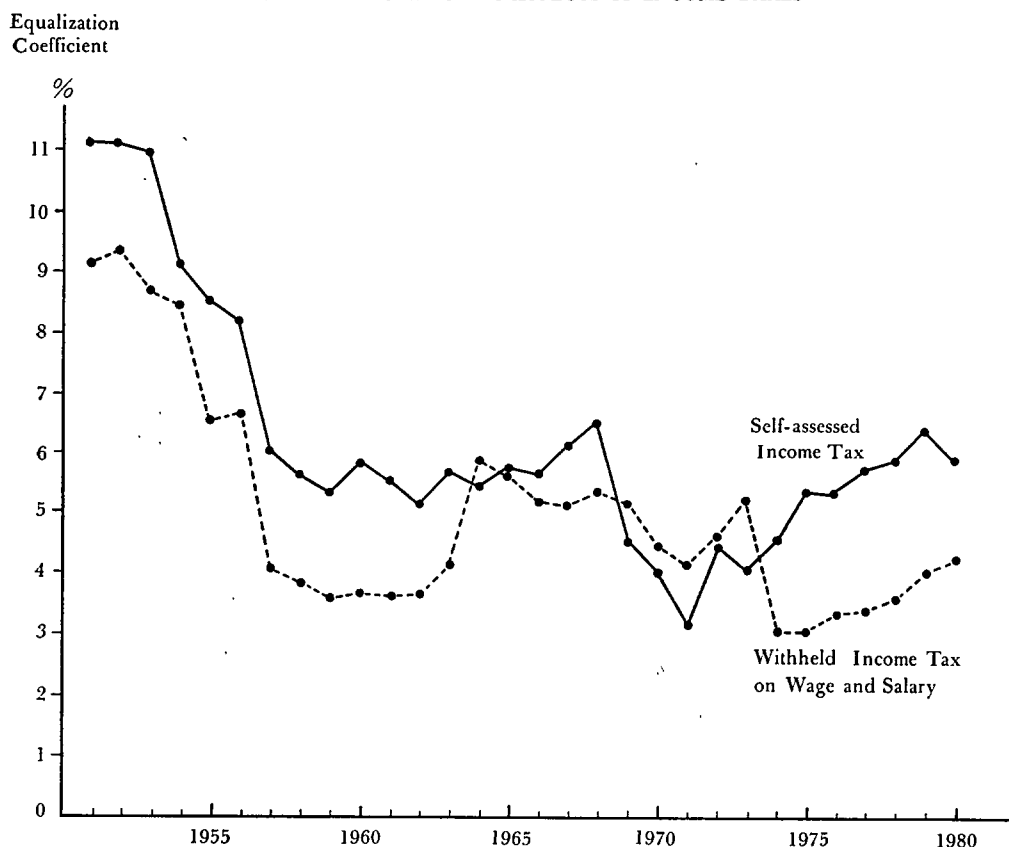
The extent of redistributive effects has been greater in the case of self-assessed income tax than in the case of withheld income tax during the whole period, except 1969–73. The income included in the self-assessment system virtually contains property income and capital gains. These items of income tend to concentrate in higher income brackets. Therefore, the self-assessed income tax levied on them has more power to equalize income distribution through the progressive tax structure.

No doubt, annual tax reductions must have substantially affected the redistributive effects

<sup>11</sup> For a more expanded discussion, see H. Simons (1938), R. Goode (1976).



FIG. 2 REDISTRIBUTIVE EFFECTS OF INCOME TAXES



of income taxes.<sup>12</sup> At first sight we can see that the long-run declining trends of the  $\phi$  in Fig. 2 were induced mainly by annual tax-cut measures. Most of tax reductions have been done in the increase of exemption and deduction in both scale and scope. While the 1950 income tax law allowed only three categories—basic exemption, exemption for dependents and earned income deductions—on a relatively small scale, the current law allows for up to 17 different exemptions and deductions.

The implication of raising the levels of exemptions and deductions is an elimination of a certain amount of income from the tax net, narrowing the whole scope of taxable income. More notably, it tends to weaken the equalizing power of progressive tax rates, because an increase of, say, ¥10,000 in exemptions or deductions cuts away taxable income in the highest

<sup>12</sup> We have so far investigated the simplest aspect of the influence of income tax on economic inequality in terms of  $\phi$ . However, the before-tax distribution of income itself varies by some factors, such as economic structural change, labor demand and supply, the trend of saving, wealth accumulation and so on. Thus, the equalizing power of the income tax examined in the preceeding discussion consists of the combined effects of two factors; one is due to the non-tax variation in the distribution of income, and the other to the change of the income tax system (e.g., rate adjustments and varying the level of exemptions and deductions). It is necessary to consider which factors were more influential in determining the redistributive effects of income taxes over time, as was seen in Fig. 2. For a discussion of this issue, see H. Ishi (1980).

bracket in which a taxpayer has his own taxable income. A section of the marginal portion is cut off the tax base from the bottom to the top. That is to say, the revenue loss from giving an additional exemption of ¥10,000 to the person subject to the top rate of 75 percent is ¥7,500. Thus, the tax progressivity as a redistributive function is seemingly subject to great impairment as a result of enlarging the scope of exemptions and deductions. All this has contributed significantly to reduce the tax progressivity of the income tax which resulted in the decline of the  $\phi$  over the long-run.

On the other hand, it generally appears that tax rate adjustments have not been influential in the redistributive effects. In a historical record, tax rates have been altered on a small scale less frequently than adjustment for exemption and deduction. In addition, they have been operated in both upward and downward directions. Consequently it is hard to find any meaningful relationship between the variation of the  $\phi$  and the rate adjustments over time.

A more significant impact on the distribution of the income seems to be derived from the introduction of special tax measures. Apart from the previously mentioned ordinary income tax law, special tax measures were initiated to stimulate the achievement of specific policy goals, especially capital accumulation. What effects do special tax measures have on the equalizing power of income taxes? Obviously, they impair the progressive rate structure. Exclusion measures lower the part of income, fully or partially, that should have been subject to the progressive income tax. Similarly, separate taxation method greatly mitigates a heavier burden on higher income brackets by applying a specific reduced tax rate.

#### IV. *Effects of Tax Incentives on Saving*

It is widely noted that the personal saving rate in Japan has been the highest among advanced countries. This marked phenomena might be interpreted in relation to another tax policy rule as a stimulative device to increase the saving.

To begin with, attention is paid to the past trend of personal saving rate<sup>13</sup> in five major countries. Fig. 3 illustrates the movement of these saving rates for 1965–79. Obviously, Japan maintains the highest level over the fifteen year period with a few exceptions. In particular, the saving rate reached a historic high of 24.1 percent in 1974 and since then fluctuated around 20 percent.

It has often been argued in Japan that the marked high level of personal saving rate should have a close bearing on the lower level of tax burden and social security contributions. This is called a “Kasumigaseki”<sup>14</sup> theory, which is identified in international comparison.

Fig. 4 depicts the personal saving rate on the vertical axis and the ratio of tax burden (including both direct and indirect taxes) plus social security contributions to personal income<sup>15</sup> on the horizontal axis. Data are prepared for OECD countries in terms of national

<sup>13</sup> The personal saving rate is defined as the ratio of current receipts minus current disbursement relative to disposable income, using the concept of national accounts in OECD statistics.

<sup>14</sup> “Kasumigaseki” is the name of government section in Tokyo, where main governmental offices like Ministry of Finance, EPA, MITI, etc., are located.

<sup>15</sup> Personal income is composed of (1) compensation of employees, (2) entrepreneurial income, and (3) property income.

FIG. 3 MOVEMENT OF PERSONAL SAVING RATE IN THE FIVE MAJOR COUNTRIES (1965-79)

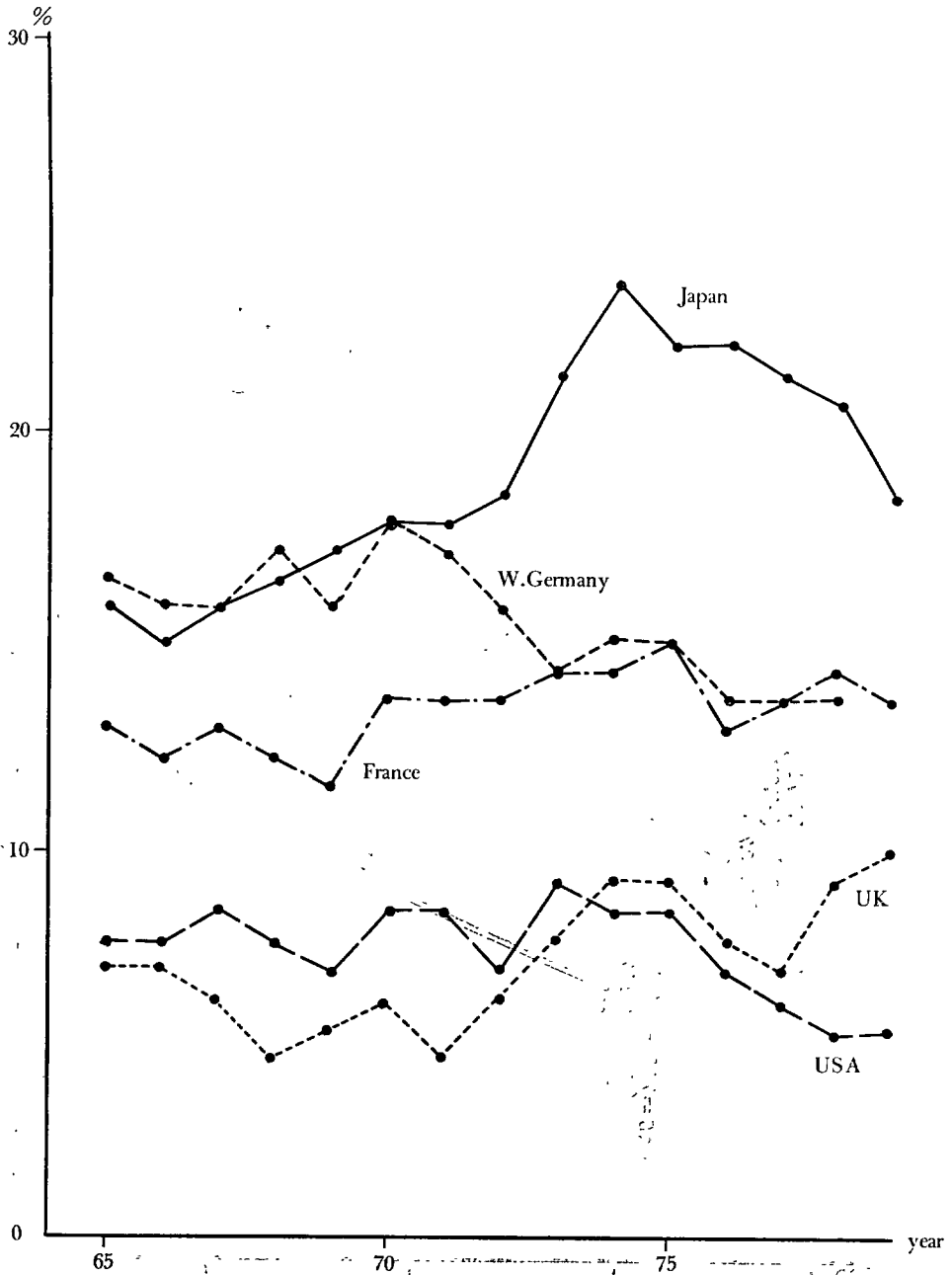
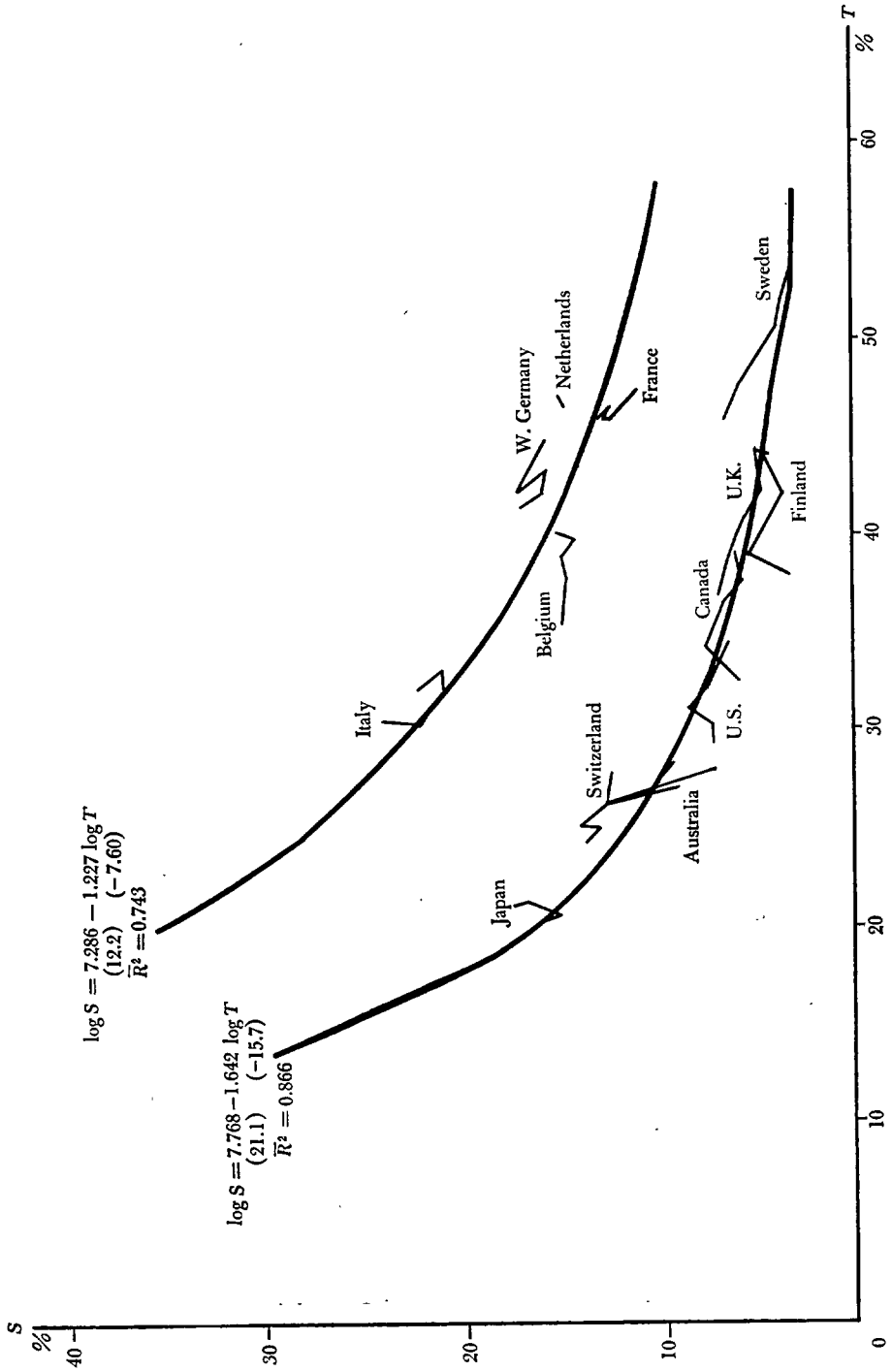
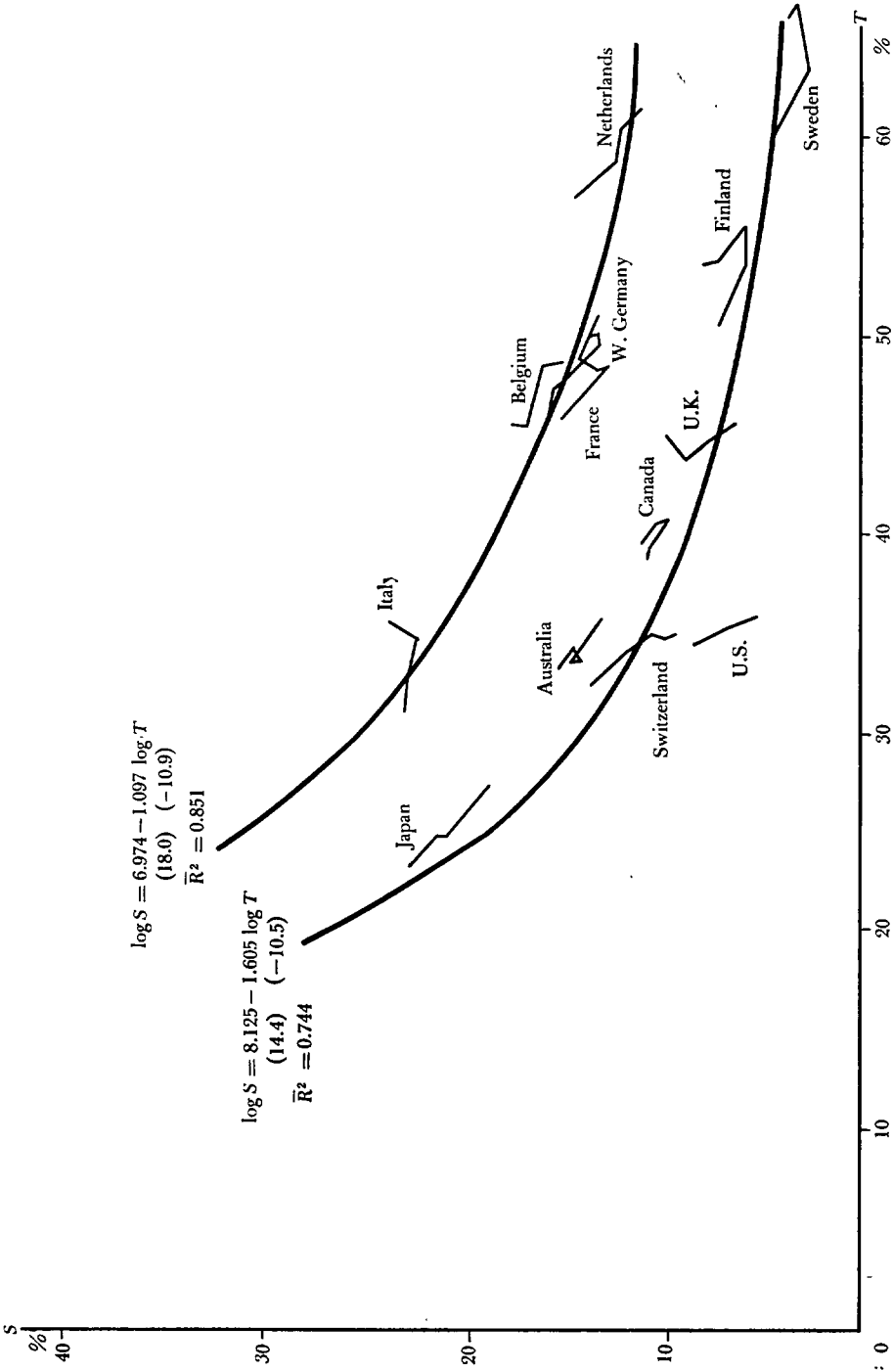


FIG. 4 THE RELATION BETWEEN PERSONAL SAVING RATE (S) AND THE RATIO OF TAXES AND SOCIAL SECURITY CONTRIBUTIONS TO PERSONAL INCOME (T)

(a) 1965-1969



(b) 1975-1979



account concepts. Evident from the observations during the two sub-periods in Fig. 4, there is a significant negative correlation between the two variables if the sample data are classified into two sub-groups. The first group which includes five countries is located in the upper part of the figure, while the remaining eight countries constitute the second group in the lower part of the figure. Regressions are computed in the logarithm form, which are estimated in two groups, respectively.

These regressions signify the fact that the personal saving rate tends to be negatively related to the level of public burden (taxes plus social security contributions), in spite of the difference found in the intercept of the two equations. Now an explanation of the different intercepts observed in Fig. 4 is called for, but such an attempt to seek some factor shifting one regression to another was not successful.<sup>16</sup>

After obtaining some correlation between saving and taxation from the experience in international comparison, we shall move to investigate the Japan's case in more details. What factors determine the variation of personal saving in Japan?

In this regard, the aggregate saving function seems to be of use to obtain a rough sketch of major determinants. A tentative attempt is made to apply the Taylor's type of saving function to the Japanese experience. As formulated by L. D. Taylor,<sup>17</sup> the reduced-form estimation equation is:

$$S = \alpha_1 S_{-1} + \alpha_2 \Delta Yw + \alpha_3 \Delta Tr + \alpha_4 \Delta Yp + \alpha_5 \Delta SI + \alpha_6 \Delta Tp + \alpha_7 \Delta r + u$$

where  $S$  = personal saving,  $Yw$  = labor income,  $Tr$  = transfer income (i.e., social security benefits, social assistance grants and unfounded employee welfare benefits),  $Yp$  = property income (i.e., interest, dividends and rent and entrepreneurial income),  $SI$  = social security contributions,  $Tp$  = personal tax (including nontax revenues),  $r$  = interest rate on 1-year time deposit, and  $u$  = an error term.

Although the derivation of this equation is a bit complicated, the equation to be estimated is of a rather simple form. It requires only the regression of personal saving on its own value in the preceding period and the first differences of the components of disposable income. In addition, the estimated model contains one additional variable, the first difference of interest rate on 1-year time deposit.

With the exception of the interest rate, data are obtained from "Income and Outlay Accounts in Household" of Annual Report on National Accounts published by the Economic Planning Agency. The quarterly data are seasonally adjusted, and nominal values are employed. Observations cover the period 1965: III through 1981: I, and thus the sample period involves sixty-three quarterly observations.

Empirical results are tabulated in Table 4, in which five equations have been estimated. Equation (1), based upon the disaggregation of disposable income and interest rate as an additional variable, is the full model. Equation (3) is estimated with labor and transfer income combined since the coefficient on transfer income is not statistically significant. Equations (2) and (4) correspond to (1) and (3) except that the interest rate variable is omitted. Finally, equation (5) is intended as a benchmark for comparison, and differs from equation (2) in that disposable income is not disaggregated.

<sup>16</sup> One possible explanation is the different pattern of the tax system. It was assumed that the heavier dependence of indirect taxes in total would probably induce the relatively high rate of saving. Tests in accordance with this assumption were not successful.

<sup>17</sup> L. D. Taylor (1971).

TABLE 4. EQUATIONS ESTIMATING PERSONAL SAVING, QUARTERLY 1965-81

Equations	change*							d.w.	$\bar{R}^2$
	Personal Saving	Labor Income	Transfer Income	Property Income	Personal Contributions to Social Security	Personal Tax	Interest Rate on 1-Year Time Deposit		
	( $S_{t-1}$ )	( $\Delta Y_w$ )	( $\Delta Tr$ )	( $\Delta Y_p$ )	( $\Delta SI$ )	( $\Delta Tp$ )	( $\Delta r$ )		
(1)	0.979 (82.74)	0.548 (8.58)	0.274 (0.78)	0.859 (10.45)	-0.721 (-3.82)	-0.986 (-6.97)	-13.415 (-0.05)	1.70	0.996
(2)	0.979 (83.91)	0.547 (8.68)	0.278 (0.82)	0.858 (10.54)	-0.723 (-3.90)	-0.985 (-7.03)		1.69	0.997
(3)	0.974 (99.92)	0.542 (8.57)		0.850 (10.47)	-0.842 (-7.93)	-0.941 (-7.30)	28.871 (0.12)	1.69	0.996
(4)	0.974 (100.84)	0.543 (8.67)		0.850 (10.56)	-0.844 (-8.04)	-0.940 (-7.37)		1.70	0.997
(5)	0.964 (100.52)	0.661 (13.04)			-0.878 (-7.93)	-0.819 (-6.39)		1.68	0.996

Source: EPA, *Annual Report on National Accounts*.

Note: The numbers in parenthesis are *t*-values. Data are seasonally adjusted quarter, and \* is first differences.

Major fact findings are summarized in the following points;

- (1) The coefficient on transfer income is not significant, and it would be easy to rationalize intuitively that transfer payments have no relation with the variation of personal savings.
- (2) Both personal tax and social security contributions have negative coefficient in all equations, as expected. The results suggest that in the short run a bulk of the adjustment to a change in personal taxes and social security contributions falls on saving rather than on consumption.
- (3) Except in equation (5), the coefficient on personal taxes is higher than that on social security contributions. If households view these contributions as a form of socialized saving, the negative coefficient on  $\Delta SI$  should be higher than that on  $\Delta Tp$ . The obtained results, however, seem to support the view that households consider contributions to social security a form of tax which will never be recovered.
- (4) The interest rate has no significant influence on the variation of personal saving. This would be quite natural, given the state of fixed interest structure and saver's behaviors during the past years.
- (5) In addition to the short-run response of savings to a change in policy variables, it is noted that the coefficient on labor income is lower than that of properly income as had expected.

Generally speaking, the aggregate saving function formulated by Taylor seems to be too crude to obtain any meaningful results of tax incentives on saving. For instance, most salient is the fact that the coefficient of  $\Delta T$  is an amalgam of two effects; i.e., (1) variations arising from changes in tax rates, exemption and deductions, and (2) changes in the tax base, reflecting those in the general level of economic activity. Unfortunately, it is very difficult to isolate each change into separate components.

This will be a future task. It might be possible to avoid to some extent these shortcomings associated with the crude model on a macro basis if we estimate the equations of saving function at the micro level, using the household budget data. In so doing, it is necessary to devise some tax parameters including changes in tax law for saving-induced measures.

### V. *Concluding Remarks—Tax Incentives vs. Tax Equity*

Utmost importance have been placed on the following three points in relation to the past tax policies. First, tax reduction policies enacted by the government have more than offset the tendency of inflation to push income earners into higher rate brackets until the mid-1970s; thereafter tax distortions caused by inflation were not corrected with unchanged tax system. Second, annual tax reductions have mitigated the equalizing powers of income tax on the income distribution. Third, it appears that tax policies have had some bearing on the high level of personal savings. This is at least true as far as the estimates of the aggregate saving function is concerned.

With regards to tax incentives, however, a number of reservations are required before reaching more conclusive results. In my view, tax incentives cannot be interpreted as having been a contributory factor towards the high saving rate in Japan. It seems to me that more attention should be paid to other possible factors; say, socio-cultural factors,<sup>18</sup> the buoyant economic activity and so on. Even if no special tax measures had been devised as incentives for savings, the saving rate would still have remained at such a high level as indicated earlier.

While these effects of tax incentives on saving are indecisive and indeterminate, there emerges very clearly the demerit of such a use of policy. That is the phenomenon of tax erosion in higher income classes<sup>19</sup> which is considered as an evidence of an unfair tax system. Obviously, elimination of tax erosion would be desirable in terms of equity. In order to achieve such a target, the following three tax reforms must be at least enacted.

- (1) Separate taxation should be eliminated, and the items of income covered in this provision should be aggregated with other income and taxed accordingly.
- (2) Income which is currently nontaxable should be fully or partially taxed. This reform would entail, in particular, removal of all exclusions for interest income and dividends and full taxation of capital gains from the sale of securities.
- (3) Unnecessary deductions, exemptions and credits should be eliminated as much as possible. In addition to such exemptions included in the Special Tax Measures Law (deductions for social insurance premiums, for life insurance premiums, and credits for acquisition of a dwelling, for example), other miscellaneous exemption provisions in the law should also be eliminated.

In conclusion, at the present time it would be unnecessary to use the tax system in a positive manner to stimulate the increase of saving at the sacrifice of tax equity. This would hold true while the personal saving still remains at a higher level. More importance should be attached to eradicate the inequitable factors of the present tax system in order to prepare for the possible tax increases in the future.

<sup>18</sup> For example, see T. Mizoguchi (1969).

<sup>19</sup> See H. Ishi (1979).



TABLE A1. WITHHELD INCOME TAX LIABILITIES AND INFLATION  
UNDER THE 1960 TAX LAW

(¥ billion, %)

(1 billion, %)

Year	Income		Deflator 1960 =100 (3)	Tax liabilities			Effective Tax Rates		
	Current Price (1)	1960 Price (2)		Actual Current Price (4)	After Inflation Adjustments		Actual (7)	After Inflation Adjustments (8)	Difference (8) - (7) (9)
					1960 Price (5)	Current Price (6)			
1960	3,516	3,516	100.0	174	174	174	4.95	4.95	0
1961	4,417	4,094	107.9	215	226	244	4.86	5.52	0.66
1962	5,362	4,796	111.8	252	289	323	4.70	6.02	1.32
1963	6,425	5,506	116.7	332	353	412	5.17	6.41	1.24
1964	7,523	6,166	122.0	392	413	504	5.21	6.70	1.49
1965	8,704	6,789	128.2	420	469	601	4.83	6.91	2.08
1966	10,025	7,459	134.4	441	529	711	4.40	7.09	2.69
1967	12,264	8,710	140.8	510	642	904	4.16	7.37	3.21
1968	14,604	9,935	147.0	613	752	1,105	4.20	7.57	3.37
1969	17,865	11,631	153.6	794	905	1,390	4.44	7.78	3.34
1970	22,788	13,887	164.1	1,020	1,108	1,818	4.48	7.98	3.50

TABLE A2. SELF-ASSESSED INCOME TAX LIABILITIES AND INFLATION  
UNDER THE 1975 TAX LAW

(¥ billion, %)

(2) Column, %									
Income			Deflator	Tax liabilities			Effective Tax Rates		
Year	Current Price	1960 Price		Actual Current Price	After Inflation Adjustments		Actual	After Inflation Adjustments	Difference
					1960 Price	Current Price			
	(1)	(2)	=100 (3)	(4)	(5)	(6)	(7)	(8)	(8) - (7) (9)
1975	14,339	14,339	100.0	1,413	1,414	1,413	9.85	9.85	0.00
1976	14,387	13,534	106.3	1,307	1,293	1,375	9.08	9.56	0.48
1977	16,107	14,333	112.4	1,497	1,412	1,586	9.29	9.85	0.56
1978	17,910	15,229	117.6	1,733	1,544	1,816	9.67	10.14	0.47
1979	20,625	17,084	120.7	2,192	1,819	2,196	10.62	10.65	0.03
1980	22,652	18,234	124.2	2,364	1,989	2,472	10.44	10.91	0.47

TABLE A3. WITHHELD INCOME TAX LIABILITIES AND INFLATION  
UNDER THE 1975 TAX LAW

(¥ billion, %)

(1) Current, %									
Income			Deflator	Tax liabilities			Effective Tax Rates		
Year	Current Price (1)	1960 Price (2)		Actual Current Price (4)	After Inflation Adjustments		Actual (7)	After Inflation Adjustments (8)	Difference (8) - (7) (9)
					1960 Price (5)	Current Price (6)			
1975	61,559	61,605	100.0	2,240	2,243	2,241	3.64	3.64	0.00
1976	71,125	66,909	106.3	2,961	2,637	2,803	4.16	3.94	—0.22
1977	76,547	68,117	112.4	3,139	2,726	3,064	4.10	4.00	—0.10
1978	83,555	71,050	117.6	3,747	2,944	3,462	4.48	4.14	—0.34
1979	90,777	75,193	120.7	4,493	3,252	3,962	4.95	4.33	—0.62
1980	98,359	79,178	124.2	5,250	3,547	4,407	5.34	4.48	—0.86

TABLE A4. REDISTRIBUTIVE EFFECTS OF THE SELF-ASSESSED INCOME TAX

Year	Gini Coefficient		Equalization Coefficient (%)	Year	Gini coefficient		Equalization Coefficient (%)
	Before Tax $R_b$	After Tax $R_a$			Before Tax $R_b$	After Tax $R_a$	
1951	0.322	0.285	11.36	1966	0.449	0.424	5.65
1952	0.307	0.272	11.42	1967	0.445	0.418	6.11
1953	0.314	0.279	10.99	1968	0.443	0.414	6.52
1954	0.289	0.263	9.12	1969	0.501	0.478	4.53
1955	0.272	0.249	8.54	1970	0.524	0.503	4.00
1956	0.308	0.283	8.20	1971	0.565	0.547	3.17
1957	0.332	0.312	6.05	1972	0.550	0.525	4.49
1958	0.331	0.313	5.64	1973	0.590	0.565	4.13
1959	0.373	0.353	5.32	1974	0.515	0.491	4.53
1960	0.404	0.380	5.83	1975	0.537	0.509	5.33
1961	0.449	0.425	5.51	1976	0.490	0.464	5.33
1962	0.456	0.433	5.14	1977	0.492	0.464	5.73
1963	0.453	0.427	5.69	1978	0.499	0.470	5.88
1964	0.453	0.428	5.47	1979	0.515	0.482	6.40
1965	0.439	0.414	5.77	1980	0.524	0.493	5.89

Source: NATT, *Statistics on the Self-Assessed Income Tax*.

TABLE A5. REDISTRIBUTIVE EFFECTS OF THE WITHHELD INCOME TAX  
ON WAGE-SALARY INCOME

Year	Gini Coefficient		Equalization Coefficient (%)	Year	Gini Coefficient		Equalization Coefficient (%)
	Before Tax $R_b$	After Tax $R_a$			Before Tax $R_b$	After Tax $R_a$	
1951	0.359	0.326	9.18	1966	0.339	0.321	5.20
1952	0.379	0.344	9.38	1967	0.330	0.314	5.12
1953	0.381	0.348	8.70	1968	0.332	0.314	5.36
1954	0.387	0.354	8.47	1969	0.320	0.303	5.18
1955	0.392	0.366	6.55	1970	0.317	0.303	4.48
1956	0.402	0.375	6.66	1971	0.316	0.303	4.15
1957	0.415	0.398	4.09	1972	0.314	0.300	4.60
1958	0.412	0.396	3.82	1973	0.315	0.299	5.20
1959	0.416	0.401	3.60	1974	0.324	0.314	3.06
1960	0.411	0.396	3.67	1975	0.301	0.229	3.04
1961	0.402	0.387	3.63	1976	0.302	0.292	3.31
1962	0.387	0.373	3.65	1977	0.302	0.292	3.39
1963	0.374	0.358	4.12	1978	0.307	0.296	3.58
1964	0.356	0.335	5.89	1979	0.312	0.299	4.00
1965	0.344	0.325	5.66	1980	0.317	0.303	4.23

Source: NATT, *Statistics on the Withheld Income Tax*.

## REFERENCES

- H. Ishi, "Cyclical Behavior of Government Receipts and Expenditures—A Case Study of Postwar Japan," *Hitotsubashi Journal of Economics*, vol. 14, no. 1, June 1973.
- , "Individual Income Tax Erosion: By Income Class in Japan," *Public Finance Quarterly*, vol. 7, no. 3, July 1979.
- , "Effects of Taxation on the Distribution of Income and Wealth in Japan," *Hitotsubashi Journal of Economics*, vol. 21, no. 1, June 1980.
- R. Goode, *The Individual Income Tax*, revised ed., Washington, D.C., the Brookings Institution, 1976.
- Japanese Ministry of Finance, Tax Bureau, *An Outline of Japanese Taxes*, 1981.
- R. Komiya, "The Levels of Capital Formation and Public Finance in Postwar Japan," *Foreign Tax Policies and Economic Growth*, National Bureau of Economic Research, 1966.
- T. Mizoguchi, *Personal Savings and Consumption in Postwar Japan*, Tokyo, Kinokuniya Bookstore, 1969.
- OECD, *National Accounts of OECD Countries*, 1981.
- J. A. Pechman and K. Kaizuka, "Taxation," in H. T. Patrick and H. Rosovsky eds., *Asia's New Giant*, Washington, D.C., the Brookings Institution, 1976.
- H. Simons, *Personal Income Taxation*, Chicago, Univ. of Chicago Press, 1938.
- E. M. Sunley, Jr. and J. A. Pechman, "Inflation Adjustment for the Individual Income Tax," in H. J. Aaron ed., *Inflation and the Income Tax*, Washington, D.C., the Brookings Institution, 1976.
- V. Tanzi, "Adjusting Personal Income Taxes for Inflation: The Foreign Experience," *ibid.*
- , *Inflation and the Personal Income Tax*, Cambridge, Cambridge Univ. Press, 1980.
- L. D. Taylor, "Saving out of Different Types of Income," *Brookings Papers on Economic Activity*, vol. 2, 1971.
- K. Yamamura, *Economic Policy in Postwar Japan*, Berkeley and Los Angeles, Univ. of California Press, 1967.